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RECD 7-10-95
F.B.
CALLED BARRY 7-27-95

June 30, 1995

Mr. Frank Battaglia, Project Manager
USEPA Region I
Waste Management Building
90 Canal Street
Boston, MA 02114

SEE MARY BARLOW

Re: Former Ciba Site - Cranston, Rhode Island
On-Site MPS and Focused CMS

Dear Mr. Battaglia:

This letter summarizes Ciba's approach for completing the On-Site RCRA Facility Investigation (RFI). The Pawtuxet River will be addressed in a separate RFI Report that will be submitted at a later date, if approved by USEPA. Three main issues are discussed here including Ciba's approach to: (1) developing Media Protection Standards (MPS) for soil and groundwater, (2) preparing a "focused" Corrective Measure Study (CMS) Report to meet the MPS (a preliminary outline of the CMS Report is attached), and (3) integrating the results of the ongoing On-Site Soil Interim Remedial Measure (IRM).

Soil MPS

ECO. RISK IN PROD. AREA?

Proposed MPS for soil were developed in the RFI using an approach similar to the On-Site IRM public health soil cleanup standards for PCBs. This approach is described in the On-Site Interim Remedial Measures Work Plan (submitted to USEPA in March 1995). MPS were proposed only if site-related chemicals showed the potential for unacceptable risk in the future, as determined by the Public Health and Environmental Risk Evaluation (PHERE) conducted during the RFI. This work is very close to completion. The results show that the target risks did not exceed a Total Hazard Index (THI) of 1, an incremental lifetime cancer risk (ILCR) range of 10^{-6} to 10^{-4}, or a Toxicity Quotient (TQ) for ecological receptors of 0.

The risk analyses were modified from those presented in the IRM risk assessment submitted to you with the IRM Work Plan. The modifications were based on risk assessment related comments to the IRM Work Plan received from the USEPA (Region 1) on May 11, and in a conference call with Region 1 on May 22.

The baseline terrestrial ecological risk assessment was prepared according to methods in the Framework for Ecological Risk Assessment (USEPA, 1992). The objective was to evaluate potential risks posed to terrestrial receptors by site-related chemicals in each of the three site areas. This was a conservative, health protective approach that most likely over estimated any "actual" risks. The target risk was a TQ $\leq$ 0.

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Using these approaches, the PHERE indicated that no chemicals detected in soil exceeded the target risks for human health or the environment. This was the case even with the highly conservative assumptions used. However, Ciba has volunteered to conduct some limited remediation of PCBs in the Production and Warwick Areas to facilitate productive use of this land. The proposed PCB MPS are 50 ppm in the Production Area and 6 ppm in the Warwick Area (Table 1).

MPS for Groundwater

Groundwater beneath the Site is classified by RIDEM as GB. It is not suitable for public or private drinking water use and is typical of highly urbanized areas with dense concentrations of industrial and commercial activities or is found beneath permanent waste disposal areas (such as landfills or disposal sites). Because of the limited areal extent of groundwater contamination at the Site, and because the contaminated groundwater discharges directly to the Pawtuxet River, the river pathway for groundwater is the only potential exposure route.

The human health risk assessment portion of the PHERE (for the On-Site RFI Report) addressed a scenario of intermittent exposure to surface water, such as would occur during canoeing. The canoeist scenario was regarded as the reasonable maximum exposure and included some very conservative exposure assumptions. The estimated potential risks were orders of magnitude below the target risks (THI $\leq$ 1, ILCR range not to exceed 10^{-6} to 10^{-4}). The lack of any public health threat posed by existing or potential groundwater concentrations is illustrated by how high these concentrations would be before there was a health concern under this exposure scenario. The values are listed in Table 2 and are extremely high. In fact, some exceed the chemical's water solubility with a couple of chemicals needing to be present as nearly pure product. Obviously, these concentrations are not at the Cranston Site, nor is it recommended that such concentrations, if they did exist, be allowed to remain. Therefore, any proposed MPS for groundwater will be addressed further in the Pawtuxet River RFI risk assessment.

On-Site Corrective Measure Study (CMS)

This section presents Ciba's approach for moving forward with the On-Site CMS. For chemicals detected in soil which exceed the target risk, Ciba proposes to evaluate only those technologies that would contain, isolate, and/or remove the chemical of concern (COC) to meet the proposed soil MPS. Using this "focused" approach, this CMS will evaluate the following technologies:

- No Action/Limited Action
- Excavation and Disposal
- Capping

Our "focused" On-Site CMS Report outline is attached to this letter for your review. Any one or a combination of the above technologies should be able to achieve the soil MPS that have proposed.

Integration of On-Site IRM

Prior to the submittal of the On-Site CMS Report (September 15, 1995), work performed during the On-Site Soil IRM will be completed. The results of this activity will be integrated into the On-Site CMS Report's conclusions and recommendations. Ciba anticipates that once the On-Site Soil IRM is completed by mid-July 1995, and the results are integrated into the On-Site CMS Report, the number of potentially viable alternatives to meet the proposed MPS for PCBs will either be greatly reduced, or determined not to be applicable for this project.

Preliminary PHERE calculations for groundwater (based upon the canoeist scenario) appear to indicate that MPS for groundwater will not be required for the protection of human health, however; MPS for groundwater based on the ecological risk to the Pawtuxet River may be needed. Groundwater stabilization is currently in the implementation phase with construction of the groundwater capture, pretreatment and soil vapor extraction (SVE) systems to begin in early July with start-up of the stabilization systems no later than September 29, 1995. The ecological risk evaluation is not anticipated to be completed until after the start-up of the stabilization system. As a result, the aquatic risk assessment and MPS for groundwater (based on aquatic risk) will be presented along with the Pawtuxet River RFI Report. Also, the initial results of the stabilization system will be integrated into the Pawtuxet River CMS Report

Schedule

A high-level schedule of ongoing activities is presented here. Key milestones for performing task activities and submitting required deliverables are summarized below:

Milestone	Date
Soil IRM - Mobilize	June 13, 1995
Soil IRM - Complete removal	July 7, 1995
Stabilization - Begin construction	July 14, 1995
Submit On-Site RFI Report to USEPA	July 31, 1995
Submit On-Site CMS Report to USEPA	September 15, 1995
Stabilization - Startup and testing	September 29, 1995

Ciba will continue to move forward with developing the On-Site CMS Report using the approaches discussed in this letter. If USEPA would like to discuss or comment on our approaches, CMS outline, or the schedule that we have presented, it is critical that we get your feedback as soon as possible.

This letter satisfies the condition that Ciba identifies and justifies the technologies that it intends to study for the On-Site CMS Report. This condition (along with other conditions) were stipulated in USEPA's letter to Ciba dated 1/20/94 (Re: Modification of Schedule for Submitting RFI Documents)

Should you have any additional comments or questions, please feel free to contact me at (908) 914-2715. Since the CMS is due by September 15, 1995, we are particularly eager to obtain your input and would be very willing to discuss this letter in a telephone conference or at a meeting, as needed.

Very truly yours,

Dr. Barry Berdahl/MH

Dr. Barry Berdahl, C.H.M.M.
Regional Compliance Manager

cc: J. Unsworth, RIDEM

Table 1.
Proposed Media Protection Standards for Soil
Former Ciba Facility
Cranston, Rhode Island

Production Area		*Waste Water Treatment Area*		*Warwick Area*	
Chemical	**Estimated MPS (mg/kg)**	**Chemical**	**Estimated MPS (mg/kg)**	**Chemical**	**Estimated MPS (mg/kg)**
Total PCBs	50	None Proposed	None Proposed	Total PCBs	6

Table 2.
Projected Groundwater Concentrations
Former Ciba Facility
Cranston, Rhode Island

CANOEIST HUMAN HLTH SCREEN 10

Production Area		*Waste Water Treatment Area*		*Warwick Area*	
Chemical	**Projected Concentrations* (ug/l)**	**Chemical**	**Projected Concentrations* (ug/l)**	**Chemical**	**Projected Concentrations* (ug/l)**
Total PCBs	$5.6 \times 10^{+3}$	Total PCBs	$6.0 \times 10^{+3}$	Total PCBs	$1.9 \times 10^{+3}$
gamma-Chlordane	$1.5 \times 10^{+5}$	*bis*(2-Ethylhexyl)phthalate	$>1.0 \times 10^{+6}$	Aldrin	$4.6 \times 10^{+5}$
Chlorobenzene	$>1.0 \times 10^{+6}$	*gamma*-Chlordane	$1.4 \times 10^{+5}$	Beryllium	$2.8 \times 10^{+4}$
2-Nitroaniline	$>1.0 \times 10^{+6}$	Dieldrin	$1.4 \times 10^{+5}$	*bis*(2-Cloroethyl)ether	$>1.0 \times 10^{+6}$
Toluene	$>1.0 \times 10^{+6}$	2,3,7,8-TCDF	$1.5 \times 10^{+1}$	Chlorobenzene	$>1.0 \times 10^{+6}$
Vinyl chloride	$>1.0 \times 10^{+6}$	Tinuvin 327	$4.2 \times 10^{+5}$	Dieldrin	$4.8 \times 10^{+4}$
				2-Nitroaniline	$>1.0 \times 10^{+6}$

* Based on a hypothetical chemical concentration in the Pawtuxet River that may be a health threat to a canoeist.

FORMER CIBA-GEIGY FACILITY - CRANSTON, RHODE ISLAND
RCRA FACILITY INVESTIGATION
FOCUSED ON-SITE CORRECTIVE MEASURES STUDY

NO GW TECH